part and the second device part is mechanically coupled to the second hinge part for providing mechanical linkage and relative movement between the first and second device parts. The method comprises:

providing a first coupling section to the first hinge part, the first coupling section having at least a section body with a constant cross section;

providing a second coupling section to the second hinge part, the second coupling section having at least a section body with a constant cross section, dimensioned for mechanically engaging with the first coupling section such that the first and second coupling sections are slidable against one another to provide at least a first mechanical coupling position and a second mechanical coupling position while the first and second coupling sections remain engaged with one another,

disposing a first electrically conductive layer, a second electrically conductive layer and a first optical conduit in the first coupling section; and

disposing a first electrical conductive segment, a second electrical conductive segment and a second optical conduit in the second coupling section, such that

the first electrically conductive layer is in electrical contact with the first electrical conductive segment when the first and second coupling sections are in the first mechanical coupling position and in the second mechanical coupling position;

the second electrically conductive layer is in electrical contact with the second electrical conductive segment when the first and second coupling sections are in the first mechanical coupling position and in the second mechanical coupling position; and

the first optical conduit is positioned relative to the second optical conduit for conveying optical signals, when the first and second coupling sections are in the first mechanical coupling position and in the second mechanical coupling position.

According to one embodiment of the present invention, the method further comprises:

positioning at least part of the first optical conduit substantially in a center section of the cross section of the first coupling section;

positioning at least part of the second optical conduit substantially in a center section of the cross section of the second coupling section;

positioning the first electrically conductive layer around the first optical conduit, the first electrically conductive layer having an outer diameter; positioning the first electrically conductive segment in the section body of the second coupling section, the first electrically conductive segment having an inner diameter dimensioned to match the outer diameter of the first electrically conductive layer;

positioning the second electrically conductive layer around and spaced from the first electrically conductive layer, the second electrically conductive layer having an inner diameter concentric to and greater than the outer diameter of the first electrically conductive layer, defining a concentric air space between the first and second electrically conductive layers, and

positioning the second electrically conductive segment around and spaced from the first electrically conductive segment, the second electrically conductive segment having a further outer diameter concentric to the inner diameter of the first electrically conductive segment, the further outer diameter dimensioned to match the inner diameter of the second electrical conductive layer, so as to allow the second electrically conductive segment and the first electrically conductive segment to reside in at least part of the concentric air space when the first and second coupling sections are in the first and second coupling positions.

According to one embodiment of the present invention, the method further comprises:

disposing an insulation layer between the first and second electrically conductive segments in the second coupling section; and

disposing an insulation layer outside the second electrically conductive layer in the first coupling section.

The present invention will become apparent upon reading the description taken in conjunction with FIGS. **1** to **11***b*.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a schematic representation of an electronic device having two device parts connected by an optical hinge, according to the present invention.

FIGS. **2***a* to **2***c* show different views of a first hinge part, according to one embodiment of the present invention.

FIGS. **3***a* to **3***c* show different views of a second hinge part, according to one embodiment of the present invention.

FIGS. **4***a* to **4***f* show different operational positions of the optical hinge, according to the present invention.

FIG. **5** is a side-view showing two hinge parts separately mounted on two device parts to allow a sliding motion between the device parts.

FIG. **6***a* shows a different view of the device parts of FIG. **5** when the device is operated in an open position.

FIG. **6***b* shows the device of **6***a* in a closed position.

FIG. **7** is a side-view showing a different implementation of the hinge parts on two device parts.

FIG. **8***a* shows a different view of the device parts of FIG. **7** when the device is operated in an open position.

FIG. **8***b* shows the device of **8***a* in a closed position.

FIGS. **9***a* to **9***d* show a clamshell phone having the optical hinge, according to the present invention, wherein one part of the phone can also be rotated along two orthogonal axes.

FIGS. **10***a* and **10***b* show a cross sectional view of the connecting sections of a hinge wherein only one electrically conductive connection is provided.

FIGS. **11***a* and **11***b* show a cross sectional view of the connecting sections of a hinge wherein three electrically conductive connections are provided.

DETAILED DESCRIPTION OF THE INVENTION

FIG. **1** is a schematic representation of an electronic device having two device parts connected by an optical hinge, according to the present invention. As shown in FIG. **1**, the electronic device **100** has a first device part **110** coupled to a second device part **150** by an optical hinge **1**. The optical hinge **1** has an optical conduit for conveying optical signals from the first device part to the second device part. The same conduit can also be used to convey optical signals from the second device part to the first device part. The optical hinge **1** also has electrical conducting parts to provide electrical power from the first device part to the second device part and vice versa.

The optical hinge **1**, according to the present invention, has a first hinge part **10** and a second hinge part **50**. The first and second hinge parts are dimensioned so that they can slide and rotate against one another. As shown in FIG. **2***a*, the first hinge part **10** has a connecting section **30** and an anchoring section **32**. The anchoring section **32** can be fixedly or movably mounted on the first device part, for